CITY OF KIRKLAND
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DEPARTMENT OF PUBLIC WORKS
PRE-APPROVED PLANS POLICY

Policy D-10: ADDENDUM TO THE 2009 KING COUNTY SURFACE WATER DESIGN MANUAL

This addendum to the 2009 King County Surface Water Design Manual (KCSWDM) applies to development and redevelopment proposals within the City of Kirkland. This Addendum includes minor revisions to the KCSWDM to address the differences between King County's and the City's organization and processes. No major substantive changes have been made to the KCSWDM in order to maintain equivalency in review requirements and level of protection provided by the manual. It is our intent to maintain equivalency with the 2005 Ecology Stormwater Management Manual for Western WA.

The 2009 KCSWDM and the attached Addendum were adopted by Council in November 2009 with an effective date of January 1, 2010. All subsequent KC addendums to the 2009 KCSWDM are assumed to be adopted unless otherwise stated.

Addendum to the 2009 King County Surface Water Design Manual

Effective date: January 1, 2010
Revised: 05/2012
Revised: 03/2013
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Introduction

This addendum to the 2009 King County Surface Water Design Manual (KCSWDM) applies to development and redevelopment proposals within the City of Kirkland. The KCSWDM has adopted requirements of the Clean Water Act, the Endangered Species Act, and the State Growth Management Act. This addendum includes minor revisions to the KCSWDM to address the differences between King County's and the City's organization and processes. No major substantive changes have been made to the KCSWDM in order to maintain equivalency in review requirements and level of protection provided by the manual. It is our intent to maintain equivalency with the 2005 Ecology Stormwater Management Manual for Western WA.

Addendum Organization

The information presented in this addendum is organized as follows:

I. Terminology: At times King County and the City of Kirkland use different terminology to describe or to refer to equivalent subject matter. This section identifies these terms and the City of Kirkland's equivalent terminology.

II. Key Revisions: This section specifically identifies the minor revisions the City has made to the KCSWDM.

III. Code Reference Tables: King County code is referenced in many places throughout the KCSWDM. This section identifies these county code references and states the equivalent city code where applicable.

IV. Mapping: The City of Kirkland equivalents to the Flow Control Applications map, Landslide Hazard Drainage Areas map, and Sensitive/Critical Areas map are available online at:

http://www.kirklandwa.gov/depart/Information_Technology/GIS.htm

V. Reference Materials: This section identifies which reference materials provided in the KCSWDM are applicable and which are not. It also identifies equivalent City of Kirkland reference materials available.

Note: Clarifications and interpretations to the KCSWDM or this addendum are documented and made available through City Regulatory Code and the Public Works Pre-Approved Plans.

I. Terminology

At times King County and the City of Kirkland use different terminology to describe or to refer to equivalent subject matter. This section identifies these terms and the City of Kirkland's equivalent terminology.

- **Critical Drainage Area (CDA).** All references to CDAs shall refer to the City of Kirkland Sensitive Areas.
- **Department of Development and Environmental Services (DDES).** All references to DDES conducting drainage reviews or determinations shall refer to City of Kirkland Public Works and Planning and Community Development Departments.
- **Department of Natural Resources and Parks (DNRP).** All references to DNRP shall refer to City of Kirkland Parks and Planning and Community Development Departments.
- **Director.** All references to the Director shall refer to the City of Kirkland Public Works Director.
- **King County.** All references to King County shall refer to the City of Kirkland (COK).
- **King County Code (KCC).** All references to the KCC shall refer to the City of Kirkland Municipal and Zoning Codes (KMC and KZC). Check code reference table for equivalent code sections.
- **King County Designated/Identified Water Quality Problem.** This determination is made on a case-by-case basis in the City of Kirkland.
- **King County Road Standards.** All references to the King County Road Standards shall refer to the City of Kirkland Public Works Pre-Approved Plans.
- **Project Size.** The project size is based on the parcel(s) and right-of-way included in the project scope. It will be assumed the area disturbed by development will encompass the entire parcel(s) and right-of-way, unless there is an easement, defined stream/wetland and buffer, NGPE, or other condition which limits the amount of developable area.
- **Redevelopment Project.** Along with the definition in the manual, a project is considered redevelopment if the property is already substantially developed. Substantially developed is not based on a minimum amount of existing impervious surface area. A property is considered substantially developed if the property's current use is consistent with the current zoning (even if it contains less than 35% impervious surface area coverage).
- **Replaced Impervious Surface.** Along with the definition in the manual, areas can be excluded from this definition for utility installation and pavement repair if the areas are non-contiguous and are less than 50% of the entire parking lot. These areas can count as "maintenance" areas, and not as replaced areas.
- **Sensitive Area Folio.** Refer to City of Kirkland Sensitive Areas Map at: http://www.kirklandwa.gov/depart/Information_Technology/GIS.htm
- **Water and Land Resources (WLR) Division.** All references to the WLR Division shall refer to the City of Kirkland Surface Water Management Division.
- **Zoning Classifications: Where the KCSWDM references Agricultural (A) Zoning, Forest (F) Zoning, or Rural (R) Zoning.** These zoning classifications are intended for areas outside of the Urban Growth Boundary, therefore the City of Kirkland contains no equivalent zoning. Refer to city zoning maps to determine which zoning classifications apply to your project. The City of Kirkland Land Use Map can be found at: http://www.kirklandwa.gov/depart/Information_Technology/GIS.htm

II. Key Revisions

This section includes minor revisions to the 2009 KCSWDM to address the differences between King County's and the City of Kirkland's organization and processes, as well as to ensure equivalency with the 2005 Ecology Stormwater Management Manual for Western WA.

Chapter 1: Drainage Review and Requirements

Applies with the revisions stated below:

If a project uses multi-family zoning and density, then multi-family stormwater requirements apply to the entire project even if the project includes detached single family homes.

1.1 Drainage Review

Criteria for review levels are defined in the COK Public Works Pre-Approved Plans, Policies D-2 and D-3. Drainage review levels used in the City of Kirkland are listed below:

- Small Project drainage review
- Targeted drainage review
- Full drainage review

When determining the level of drainage review, the following items apply:

- Areas that change from existing gravel to paved will be counted as new impervious surface area, not replaced impervious area.
- Flow control BMPs cannot be used to reduce the level of drainage review, but can be used to reduce the amount of flow control required. For example, proposed driveways and roads will always be counted as fully impervious for the drainage review level, but permeable pavement can be used to meet flow control requirements.

1.1.2.3 Full Drainage Review

Consistent with the 2005 Ecology Stormwater Management Manual for Western WA (pages 2-11 and 2-12), Full Drainage Review is required when the project will result in 5,000ft^2 or more of new impervious surface, or 10,000ft^2 or more of new plus replaced impervious surface.

Note: Smaller projects still require a drainage review, per COK Public Works Pre-Approved Plans, Policy D-2.

1.2 Core Requirements

1.2.2 Core Requirement #2: Offsite Analysis

1.2.2.1 Downstream Analysis

Exclude the section titled Downstream Water Quality Problems Requiring Special Attention. Water quality problems in the City of Kirkland are addressed through educational programs and source control.

1.2.3 Core Requirement #3: Flow Control

Historic conditions will be used for pre-developed runoff modeling of all projects in Level 2 flow control areas. A City of Kirkland flow control map is located at: http://www.kirklandwa.gov/depart/Information_Technology/GIS.htm

Consistent with the 2005 Ecology Stormwater Management Manual for Western WA, the threshold for the Impervious Surface Exemption for Transportation Redevelopment Projects is:

a) Less than 5,000ft^2 of new impervious surface will be added, AND
b) Less than 35,000ft^2 of new pervious surface will be added, AND
c) The total new impervious surface within the project limit is less than 50% of the existing impervious surface.

The City will accept bioretention (flow-through) planters for Basic Flow Control (Level 1), provided the design meets the criteria set forth in the City of Seattle Stormwater Manual (Volume 3, Section 4.4.5.3). The planters shall contain plants from the Seattle Green Factor Plant List.

Projects triggering a Full Project Drainage Review proposing infiltration/bioretention facilities or pervious pavement to meet Level 1 or 2 flow control or for onsite flow control BMPs require a Full Project Soil Report (see section 5.4, page 5-57).

Projects triggering a Small Project or Targeted Drainage Review proposing infiltration trenches, drywells, rain gardens, or pervious pavement without an overflow connection to the public storm drainage system for onsite flow control BMPs require a Small Project Soil Report (see page C-41).

To demonstrate LID is not feasible on a project of any size, a site specific soil analysis is required including the following items (at a minimum):

a) For Full Drainage Review Projects, a soil log performed by a geologist or civil engineer, noting soil classification and groundwater level if present, (one soil log for every 10,000sf area of project site, 8 foot minimum depth).

b) For Small Project Type II & Targeted Review Projects, a soil log performed by a geologist or civil engineer, noting soil classification and groundwater level if present, (one soil log for every 10,000sf area of project site, 6 foot minimum depth).

1.2.3.1 Area-Specific Flow Control Facility Requirement

The Impervious Surface Percentage Exemption stated on page 1-38 is void and does not apply to the City of Kirkland.

Regarding Exceptions to Flow Control Requirements in both Basic (#1) and Conservation (#2) Flow Control Areas, waiving flow control if project generates less than a 0.1cfs increase in 100-yr peak flows, only BMPs listed on Table 1.2.3.C (page 1-47) can be used on a project to meet the 0.1cfs limit. For example, infiltrator chambers or flow through planters cannot be used to show reduction of flows to qualify for an exception to flow control requirements.

To meet the requirements of the 0.1cfs exception, total pre-developed and post-developed areas must match.

Regarding Target Surfaces in Conservation Flow Control Areas, #5 on page 1-41, the applicant must use the most current appraised improvement value available from the King County Assessor for the property to be developed.

Regarding Target Surfaces in Conservation Flow Control Areas to be mitigated, vegetated areas in easements and/or tracts must be modeled from forested in the pre-

developed condition to lawn in the developed condition, unless the area is placed in a tract or easement that will preserve the native vegetation during and after construction.

1.2.3.2 Flow Control Facility Implementation Requirements

There are several hydrologic modeling programs available; determining the appropriate program to use depends on the purpose for the modeling.

The table below lists the appropriate modeling programs to use for the different purposes:

Surface Water Task	KCRTS	WWHM3	MGSFlood v3	MGSFlood v4	Rational Method
Size stormwater LID facilities[1]	No	No	No	Yes	No
Size traditional stormwater facilities (tanks, vaults, ponds)[2]	Yes	Yes	Yes	Yes	No
Meet 0.1cfs exception to flow control	Yes	Yes	Yes	Yes	No
Determine water quality flow rate	Yes	Yes	Yes	Yes	No
Calculate Conveyance for tributary areas > 10 acres	Yes	No	Yes	Yes	Yes
Calculate Conveyance for tributary areas < 10 acres[3]	No	No	No	No	Yes

[1]LID facilities can be sized using Appendix C or modeled using MGSFlood v4.
[2]If using an LID facility to downsize the volume of a traditional stormwater facility sized using KCRTS, WWHM3, and MGSFlood v3, use the Flow Control BMP Facility Sizing Credits table in the 2009 KCSWDM and size the LID facility per Appendix C.
[3]KCRTS may be used for conveyance calculations if significant storage features are installed.

If the proposed stormwater facility will be designed with an underdrain, then the underdrain must be included in the hydrologic modeling calculations.

For information on modeling pervious surfaces, see Table 3.2.2.C. The most common examples proposed are the following:

- sand sport fields – model as 75% grass and 25% impervious,
- synthetic turf (like "Dream Turf") – model as 75% grass and 25% impervious.

1.2.5 Core Requirement #5: Erosion and Sediment Control

1.2.5.1 ESC Measures

Amended Soil (BMP T5.13, 2005 Ecology Stormwater Management Manual for Western WA) is required for all landscaped areas on all project sites 1 acre or larger. Amended soil is recommended for all landscaped areas on project sites smaller than 1 acre.

1.2.5.2 ESC Performance and Compliance Provisions

B. Monitoring of Discharges

For projects that clear 2,000ft^2 or greater, the City may require the ESC Supervisor to have a turbidity meter onsite and use it to monitor surface and stormwater discharges from the project site and into onsite wetlands, streams, or lakes whenever runoff occurs from onsite activities and during storm events.

1.2.6 Core Requirement #6: Maintenance and Operations

Publicly maintained facilities will be maintained by the City of Kirkland.

An Operation and Maintenance Manual is required for all privately maintained stormwater detention, water quality, including low impact development facilities. The manual shall be submitted as part of the permit application. A copy of the Operation and Maintenance Manual shall be retained on site and shall be transferred with the property owner to the new owner. A log of maintenance activity indicating when cleaning occurred and where waste was disposed of shall also be kept by the owner and available for inspection by the City of Kirkland.

1.2.7 Core Requirement #7: Financial Guarantees and Liability

This section is replaced by KMC 15.52.080, bonds and irrevocable license to enter.

1.2.8 Core Requirement #8: Water Quality

Pervious pavement surfaces with vehicular traffic do not require installation of an additional water quality treatment facility provided the soil beneath the pervious pavement meets requirements of the Soil Treatment Exemption #4 (pages 1-65, 1-66). The soil provides the required water quality treatment.

1.2.8.1 A. Basic WQ Treatment Areas

Thresholds requiring Enhanced Basic Water Quality Treatment are:

- Industrial, commercial, and multi-family project sites 1 acre or larger.
- Road related project sites 1 acre or larger, with an AADT of 7,500 or greater.
- Sports/play fields composed of synthetic turf.

Single family residential subdivisions will not be required to implement enhanced basic water quality treatment. The thresholds stated above are consistent with the 2005 Ecology Stormwater Management Manual for Western WA.
For projects less than 1 acre in size meeting the land use criteria listed above (non-single family residential) for Enhanced Basic WQ Treatment, apply the enhanced treatment requirement unless it can be shown as not feasible.

Reductions of water quality treatment level from Enhanced to Basic, Exception #4, is not allowed in the City of Kirkland. Projects in Kirkland cannot reduce the level

of required water quality treatment by prohibiting the use of leachable metals on the property.

For a rain garden to meet enhanced basic water quality treatment, it must be designed, using an approved continuous runoff model, to infiltrate 91% of the influent runoff (2005 Ecology Stormwater Management Manual for Western WA, Volume V, pg 3-8).

The City will accept all water quality treatment facility-types identified in the 2005 Ecology Stormwater Management Manual for Western WA, with the following additions and alterations:

- Emerging technologies will be considered on a case-by-case basis, provided the product has received a level of use designation from WA State Dept. of Ecology (see the following website): http://www.ecy.wa.gov/programs/wq/stormwater/newtech/index.html
- The City accepts Filterra facilities to meet applicable water quality treatment requirements. All projects proposing to install Filterra facilities must have the site specific design reviewed by Americast before the facility is installed. Applicants must complete the Filterra Project Information Form and submit it and other applicable Filterra correspondence with City permit applications.
- The COK encourages the use of stormwater low impact development techniques as appropriate.

1.2.8.1 B. Sensitive Lake WQ Treatment Areas

This section does not apply to the City of Kirkland.

1.2.8.1 C. Sphagnum Bog WQ Treatment Areas

This section does not apply to the City of Kirkland.

1.2.8.2 Water Quality Implementation

In addition to KCRTS, Western Washington Hydrology Model (WWHM) and MGS Flood can be used for water quality treatment facility design.

Water quality treatment is required if the overall project creates or replaces 5,000ft^2 or more of pollution generating impervious surface area (area subject to vehicular traffic) before considering reductions with BMPs, like pervious pavement. Pervious pavement can be used for a portion of the site, but if the overall project triggers water quality treatment then water quality treatment BMPs are required for all new or replaced areas of traditional pavement subject to vehicular traffic. For example, if you have 4,000ft^2 private PGIS and 1,500ft^2 public PGIS, pervious pavement can be used for the private portion but another type of water quality treatment is required for the public portion.

1.3.1 Special Requirement #1: Other Adopted Area-Specific Requirements

Projects located in the Holmes Point Area must also comply with lot coverage and other standards included in the Kirkland Zoning Code, *Chapter 70 – Holmes Point Overlay Zone*.

1.3.2 Special Requirement #2: Flood Hazard Area Delineation
Flood Hazard Area is any area adjacent to a Kirkland sensitive area, unless topography is such that the area will not flood.

1.3.3 Special Requirement #3: Flood Protection Facilities
This section does not apply to the City of Kirkland.

1.3.4 Special Requirement #4: Source Controls
Source Control requirements are replaced by Volume IV of the 2005 Ecology Stormwater Management Manual for Western WA.

1.4 Adjustment Process
Refer to the Surface Water Adjustment Process defined in COK Public Works Pre-Approved Plans, Policy D-11.

Chapter 2 Drainage Plan Submittal
Applies with the revisions stated below:

2.1 Plans Required for Drainage Review
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.2 Plans Required with Initial Permit
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.3 Drainage Review Plan Specifications
2.3.1.1 Technical Information Report
An Operation and Maintenance Manual is required for all privately maintained stormwater detention and water quality facilities, and is submitted as part of the permit application.

2.3.1.2 – Site Improvement Plan
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.3.1.3 – ESC Plan Section
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.3.1.4 – Stormwater Pollution Prevention and Spill (SWPPS) Plan
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.3.1.5 – Landscape Management Plan
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.3.2 – Projects in Targeted Drainage Review (TDR)
Refer to the COK Public Works Pre-Approved Plans, Policies G-7, D-2, and D-3.

2.4 Plans Required After Drainage Review (pg 2-35)
Refer to the COK Public Works Pre-Approved Plans, policies G-7, D-2, and D-3.

Chapter 3 Hydrologic Analysis & Design

Applies with the revisions stated below:

3.2.2.1 Generating Time Series
Calculation of Impervious Area

For residential development, the assumed impervious coverage shall be the maximum impervious coverage permitted by zoning code, typically 50% lot coverage except for the Holmes Point Overlay Zone (not automatically 4,000sf as in the 2009 KCSWDM). The assumed impervious can only be less if a covenant, sensitive area, or native growth protection easement exists.

Chapter 5 Flow Control Design

Applies with the revisions stated below:

5.2 Flow Control BMP Requirements

Soil Amendment (per Ecology BMP T5.13) and Tree Retention could be considered to meet low impact design (LID) flow control BMP requirements. This would be considered through the Surface Water Adjustment Process (COK Public Works Pre-Approved Plans, Policy D-11), on a case-by case basis.

5.2.1.4 Implementation Requirements for Individual Lot BMPs

This section is replaced by KMC 15.52.080, bonds and irrevocable license to enter.

5.3 Detention Facilities

Use details located in the COK Public Works Pre-Approved Plans, if available.

5.3.4.1 Control Structures Design Criteria

Standard minimum orifice diameter is 0.5 inches. If a smaller orifice diameter is needed to meet target release rates, use one of the following options:

- Keep orifice size at 0.5 inch and reduce live storage to maximum 3 feet depth, or
- Reduce orifice size (0.25 inch minimum)

A removable screen is required when the bottom orifice size is 1" or less. The screen shall be made from stainless steel mesh, 8 inch depth, and attached with a minimum of 3 stainless steel screws. The size of the mesh openings must be less than the orifice diameter (0.25 inch mesh typical).

5.3.5 Parking Lot Detention

Parking lot detention is not allowed in the City of Kirkland.

Chapter 6 Water Quality Design

Applies with the revisions stated below:

Use details located in the COK Public Works Pre-Approved Plans, if available.

6.1.2 Enhanced Basic Water Quality Menu

For a rain garden to meet enhanced basic water quality treatment, it must be designed, using an approved continuous runoff model, (WWHM or MGS Flood) to infiltrate 91% of

the influent runoff (per the 2005 Ecology Stormwater Management Manual for Western WA, Volume V, pg 3-8). If using WWHM3 and the bioretention element is not available, use the gravel trench element to model the rain garden for enhanced basic water quality treatment.

6.5.5.1 Stormfilter Methods of Analysis

Consistent with the most current Department of Ecology General Use Level Designation for Western WA, pre-settling is not required if stormfilter precedes a detention facility.

Appendix B: Master Drainage Plan Objective, Criteria and Components, and Review Process

This Appendix does not apply to projects in the City of Kirkland.

Appendix C: Small project Drainage Requirements

Applies with the revisions stated below:

C.2.2.3 Use of Gravel Filled Trenches for Full Infiltration

Products like infiltrator chambers are not equivalent to gravel filled infiltration trenches, and cannot be sized using the volume method for gravel trenches in Appendix C.

C.2.6.4 Permeable Pavers

Sand is not allowed in between or below permeable pavers in the City of Kirkland. No. 8 Aggregate shall be used in openings between pavers, and in the bedding course.

C.2.6.6 Grassed Modular Grid Pavement

Modular grid pavement with grass planted in the openings or in a thin layer of soil over the grid material cannot be used for single family residential driveways that are used on a daily basis in the City of Kirkland. Past performance shows the grass does not grow well when subject to vehicular traffic on a daily basis.

III. Code Reference Tables

King County Code is referenced in many places throughout the KCSWDM. The following table identifies the county code references and states the equivalent City of Kirkland code where applicable (Kirkland Municipal Code is KMC and Kirkland Zoning Code is KZC). Policies are located in the Public Works (PW) Pre-Approved Plans.

King County Code Reference	Subject of Reference	COK Code/Policy Equivalent	Comment
KCC 2.98	Adoption procedures and Critical Drainage Areas	KZC Chapter 90	
Title 9	Surface Water Management	KMC 15.52	
KCC 9.04	Surface Water Run-off policy	KMC 15.52	
KCC 9.04.030	Drainage Review	PW Pre-Approved Plans	Policy D-2
KCC 9.04.050	Drainage Review-requirements	PW Pre-Approved Plans	Policy D-2
KCC 9.04.070	Engineering plans for the purposes of drainage review	KMC15.52.060 and PW Pre-Approved Plans	Policy D-2

KCC 9.04.090	Construction timing and final approval	KMC 15.52.060	
KCC 9.04.100	Liability Requirements	KMC 15.52.080	
KCC 9.04.115	Drainage Facilities accepted by King County	KMC 15.52.070	
KCC 9.04.120	Drainage Facilities accepted by King County	KMC 15.52.070	
KCC 9.12	Prohibited discharges in the water quality section	KMC 15.52.090	
KCC 9.12	Water Quality	KMC 15.52.090 – 15.52.110	
KCC 9.12	Water Quality: Stormwater Pollution Prevention Manual Adoption	KMC 15.52.100	
KCC 16.82	Erosion and Sediment Control, Clearing and Grading	KMC 15.52.060	
KCC 16.82.095(A)	ESC standards: seasonal limitation period	PW Pre-Approved Plans	Erosion/Sediment Control Plan Notes, item #9
KCC 16.82.100(F)	Grading standards: preservation of duff layer	KZC Chapter 95	
KCC 16.82.100(G)	Grading Standards: soil amendments	KZC Chapter 95	
KCC 16.82.150	Clearing standards in rural zone	Not applicable	COK does not contain rural zones
KCC 20.20	Land Use Review Procedures	KZC Title 23	
KCC 20.70.020	Critical Aquifer recharge area	Not applicable	No critical aquifer recharge areas in COK
KCC 21A	Critical Areas Requirements	KZC Title 23	Sensitive areas in Chapter 90
KCC 21A.14.180.D	On-site recreation space required	No equivalent City code exists	On-site recreation space is not required
KCC 21A.24	Critical Areas Code	KZC Chapter 90	
KCC 21A.38	Property specific development standards or special district overlays	KZC Chapter 90	
KCC 23.20	Code compliance: citations	KMC 1.12.030	
KCC 23.24	Code compliance: notice and orders	KMC 1.12.040	
KCC 23.28	Code compliance: stop work orders	KMC 1.12.070	
KCC 23.40	Code compliance: liens references on declaration of covenants form	KMC Title 15	

IV. Mapping

Below is a list of City of Kirkland maps to be used during drainage design. The maps can be viewed on-line or viewed at the Public Works counter at City Hall.
The maps are available on the following website:

http://www.kirklandwa.gov/depart/Information_Technology/GIS.htm

1. Base Map
2. Flow Control Map
3. Sensitive Areas Map
4. Land Use Map

V. Reference Materials

This section identifies which reference materials provided in the 2009 KCSWDM are applicable and which are not. Reference materials that have been struck through (i.e., ~~struck through~~) are not applicable to projects in the City of Kirkland.

~~1. KCC 9.04 – Surface Water Runoff Policy~~
~~2. Adopted Critical Drainage Areas~~
~~3. Other Adopted Area Specific Drainage Requirements~~
    ~~A. RA Zone Clearing Restrictions~~
4. Other Drainage Related Regulations and Guidelines
    A. Grading Code Soil Amendment Standard (required on project sites 1 acre or larger)
    B. Clearing & Grading Seasonal Limitations
    ~~C. Landscape Management Plan Guidelines~~
    ~~D. Shared Facility Maintenance Responsibility Guidance~~
5. Wetland Hydrology Protection Guidelines
6. Hydrologic/Hydraulic Design Methods
    A. EPA Infiltration Rate Test
    B. Pond Geometry Equations
~~7. Engineering Plan Support~~
    ~~A. King County Standard Map Symbols~~
    ~~B. Standard Plan Notes and Example Construction Sequence~~
    ~~C. Stormfilter Access and Cartridge Configuration~~
8. Forms and Worksheets
    A. Technical Information Report (TIR) Worksheet
    B. Offsite Analysis Drainage System Table
    C. Water Quality Facility Sizing Worksheets
    D. Flow Control and Water Quality Facility Summary Sheet and Sketch
    E. CSWPPP Worksheet Forms
    ~~F. Adjustment Application Form and Process Guidelines~~
    ~~G. Dedication and Indemnification Clause – Final Recording~~
    ~~H. Bond Quantities Worksheet~~
    ~~I. Maintenance and Defect Agreement~~
    ~~J. Drainage Facility Covenant~~
    ~~K. Drainage Release Covenant~~
    ~~L. Drainage Easement~~
    ~~M. Flow Control BMP Covenant~~
    ~~N. Impervious Surface Limit Covenant~~
    ~~O. Clearing Limit Covenant~~
    ~~P. River Protection Easement~~
    ~~Q. Leachable Metals Covenant~~
~~9. Interim Changes to Requirements~~
    ~~A. Blanket Adjustments~~
    ~~B. Administrative Changes~~
~~10. King County-Identified Water Quality Problems~~